JOB SHEET 2-3-30
LINEAR MOTION ESTIMATE FUNCTION

INTRODUCTION

This function displays a **PUP** calculated linear motion estimate for a selected echo feature given input from the PUP operator. In addition, an estimated "linear motion" of the storm's direction and speed is displayed on the feedback line. **Note that any action resulting in a PUP response on the feedback line, such as RECENTER MAG, will over-write the storm's direction and speed on the feedback line**. **A HARDCOPY command retains the linear motion feedback data on the hardcopy.** The linear motion display is similar to the Storm Track Overlay and projects the echo motion up to one hour from the current location. The display also shows the current location of the echo and the projected location and time, in fifteen minute increments.

There is no Graphic Tablet Box for this feature. This particular function is referred to as an ***implied*** function. This means that anytime the 3-step process listed below is followed, the function will be activated.

OBJECTIVE

Use the Graphic Tablet and this 3-step process to estimate the speed and direction of a specified feature using the linear motion estimate function.

REFERENCES

NWS EHB 6-531-1, USERS GUIDE: PUP/RPGOP, Sections 4.13.1 and 4.13.2

PROCEDURE

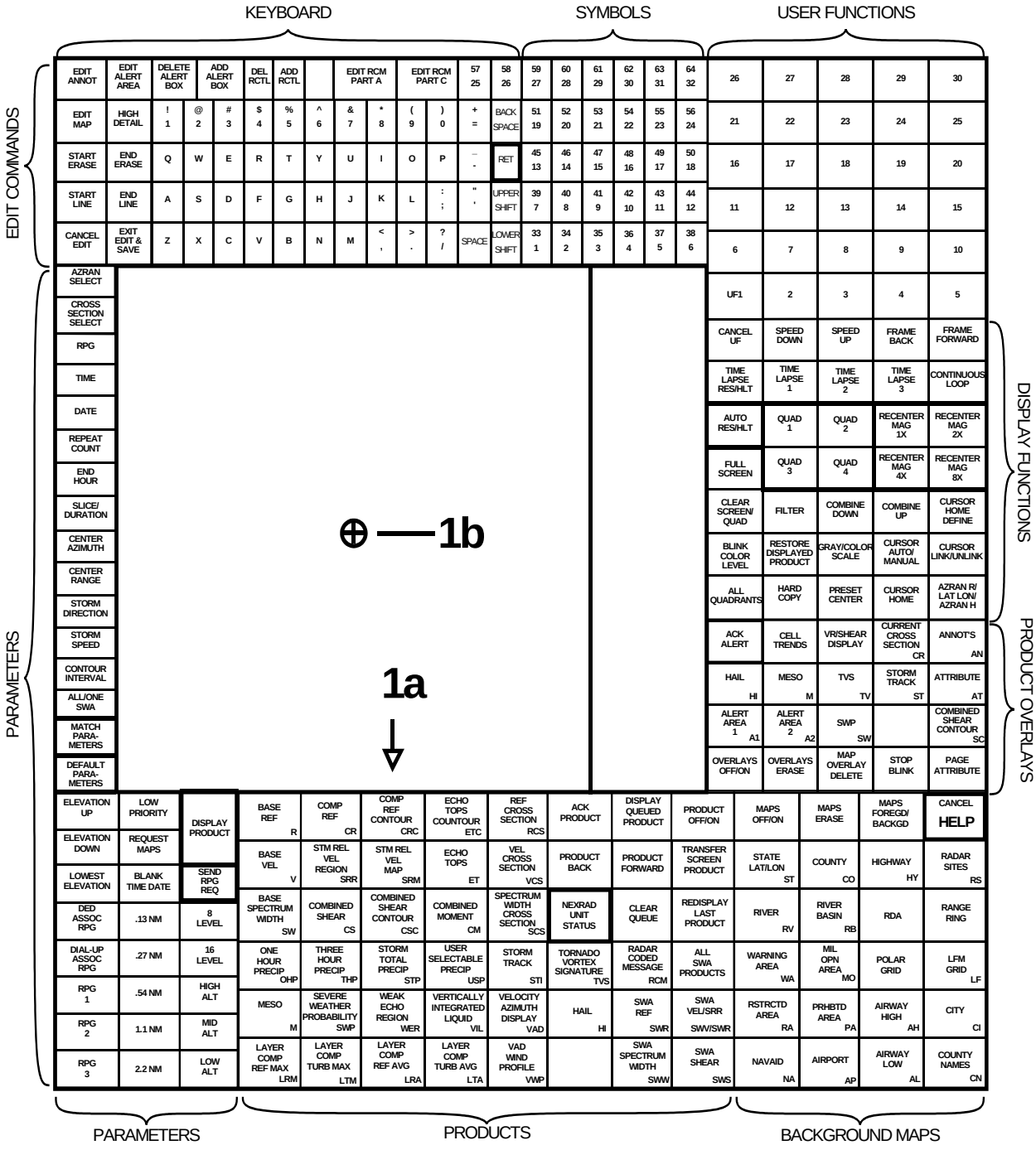
Graphic Tablet

1. a. Select a product of your choice.

   b. Place the cursor on any feature of interest, and press the appropriate puck button. This defines one of the two points from which the linear motion calculation is based.

   Note: It may be helpful to magnify the point of interest as this allows you to pinpoint the echo feature of interest.

GRAPHIC TABLET



2. Select "PRODUCT FORWARD" or "PRODUCT BACK" until you arrive at the appropriate product time to be used for selecting the second point for computing the linear motion.

   - Note that too short a time period may result in an inaccurate estimate of motion and too long of a time between products could make it difficult to locate the same feature.

3. Use the puck to re-select the same echo feature. This defines the second location for the linear motion calculation.

4. Note the immediate display of the linear motion

   - The PUP immediately displays the linear motion estimate overlay based on these two selected cursor positions. The display indicates the "*past location*" with the letter **"P"**, the "*current location*" with the letter **"C"**, and four estimated future locations out to an hour. The future locations at 15 minute intervals are labeled with the actual clock time the echo will be at that location. In addition, an estimated direction and speed is displayed on the feedback line.

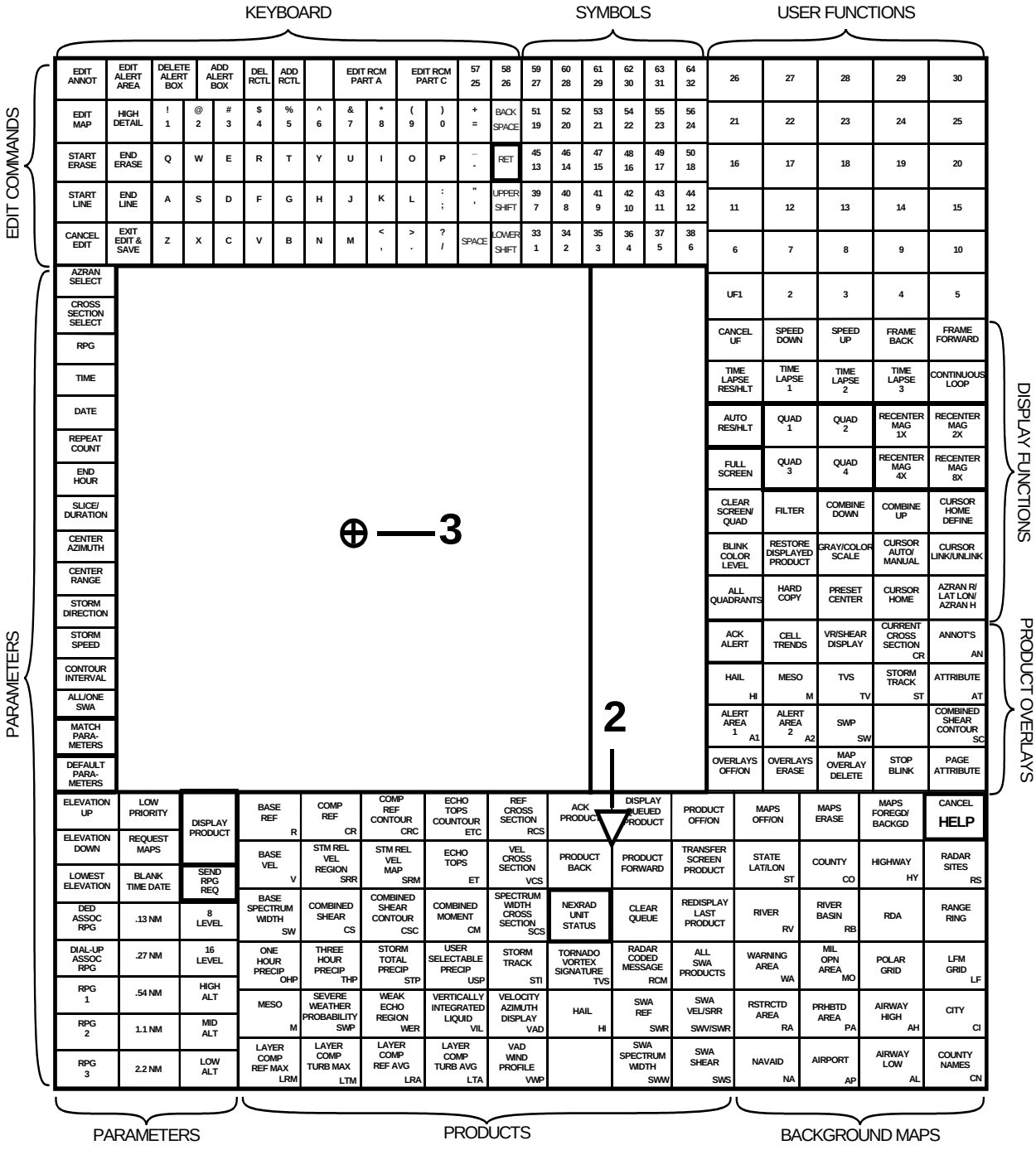
   - The linear motion overlay is automatically saved as an annotation to the product last used to select a point. More than one linear motion estimate may be selected for a product.

ADDITIONAL INFORMATION

It should be noted that the selection of the time interval has a significant effect on the linear motion estimate. If we assume the feature has true linear motion, the smaller the time interval between the two products, the greater the potential for error when it is extrapolated out to a 60 minute future position. Therefore, whenever possible, use a greater interval between products by selecting "PRODUCT FORWARD/BACK" more than just once.

The sequence of the linear motion estimate is very important. Anytime the sequence (select point...product forward/back...select point) is done, the linear motion estimate is run. For example, just after you select a point over a storm, to see how far it is from a city, you notice that a later version of that product has just come in. You product forward and select a point on the same storm. That's right, whether you want it or not the linear motion estimate function will run and you will get the overlay.

GRAPHIC TABLET



ADDITIONAL INFORMATION

It is recommended that you start with a past product and then product forward when using this function. This proceedure eliminates any confusion when using the 60 minute forecast track.

There is a maximum linear speed of 200 knots. If this is exceeded, the feedback line with display **LINEAR MOTION: MAX SPEED EXCEEDED**.

END